

**REMARKS**

Reconsideration of this application is requested. Claims 1-13, 16 and 17 will be active in the application subsequent to entry of this amendment.

The claims have been amended in order to more particularly point out and distinctly claim that which applicants regard as their invention and to feature the pharmaceutical composition formulated as a cream or ointment which hardens at least in the surface portion of the cream or ointment when topically applied. This enables the composition to reside at the site of application and to provide controlled release of the active ingredient from the composition so applied. The importance of these features, as described in applicants specification, and the shortcomings of the applied prior art are discussed in the remarks that follow.

The claims have also been amended in order to take into account the examiner's comments in items 1-4 of the Official Action. Claim 9 has been amended to remove the "such as" expression, claims 14 and 15 have withdrawn and preparation claim 17 has been added. In addition, various claims included improper multiple dependencies which have now been corrected by this amendment.

Original claims 1-10 and 12-16 are rejected as being anticipated by Lerner et al. (U.S. 6,197,331), or for claims 1-16 unpatentable over Lerner et al. in view of Ganguly et al. (U.S. 4,743,598). Applicants traverse these rejections having regard to the amendments made to the claims and the deficiencies in the prior art cited as explained in detail below.

**Present Invention**

The fundamental difference of the present invention from Lerner et al. is that the composition of the present invention is a cream or ointment which hardens at least in the surface portion at a site of application. This is important to enable the composition to reside at the site for a long period to effect sustained release of the active ingredient from the composition. This feature of the present invention has been emphasized by

amendments to the claims. Though the sites of the application are not limited, the composition will be particularly useful when applied to periodontal pockets.

The examiner will note that the present invention is based on the idea that imparting, besides sustained release properties, *post-application shape retention properties to a composition is necessary to release an active ingredient stable for a long period* (see page 4, lines 2-7 of the specification).

Therefore, the base material of the composition normally takes a soft gel form, and can be easily applied to a topical site (e.g., a periodontal pocket) as a cream or an ointment by a finger, or through a tube, or by means of a specially designed injection instrument such as a syringe (page 6, lines 6-10 of the specification), whereas once the composition has been applied topically, at least the surface portion of the composition hardens at the topical site of application, thereby residing at a topical site for a long period of time to enable the effect of an active ingredient to persist (see page 4, lines 15-18 of the specification).

In order to harden at a site of application, the composition of the present invention comprises a water insoluble polymer, and a solvent that is both capable of dissolving the water insoluble polymer and compatible with water as indispensable components, in addition to an active ingredient and optional other additives. Thus, the solvent compatible with water enables water, which exists around the topical site of application, to enter at least a surface portion of the base in accordance with the outflow of the solvent from the base, and as a result of entry of water, the water insoluble polymer hardens at least in the surface portion of the base (see page 6, lines 10-15 of the specification).

Lerner et al.

In complete contrast to the present invention, Lerner et al. is directed to a sustained- or controlled-release solid composition for the oral cavity or “pharmaceutical oral patch” that adheres to hard dental surfaces, such as teeth and dentures (see the first sentence of the specification).

It is important to note that in order to solve the problem of allowing the composition to reside at a site of application, Lerner et al. invented an oral patch, which does not harden at a site of application as in the composition of the present application. Thus, Lerner et al. clearly state that "ointments are not satisfactory for oral cavity administration because of insufficient adhesion and rather high solubility" (column 4, lines 50-52).

Therefore, Lerner et al. did not address or relate to the problem of how to keep a cream or ointment at a site of application, nor do they even remotely suggest the approach to solve the problem by the combined use of "a water insoluble polymer, and a solvent capable of dissolving the water insoluble polymer and compatible with water" as disclosed and claimed in the present application. In fact, Lerner et al. indicate that a cream or ointment will be unsuitable for such uses, as discussed above.

From the above discussion it will be apparent that Lerner et al. in no way is suggestive of the compositions of the present invention and their properties. In fact, Lerner et al. teaches quite the opposite and in doing so leads one of ordinary skill in the art away from the subject matter defined by applicants' claims. These deficiencies cannot be cured by reliance on secondary references, thus the "obviousness"-based rejection fails automatically because the primary reference itself is not only inadequate but teaches in the opposite direction.

Ganguly et al.

Ganguly et al. is a secondary reference to be combined to Lerner et al. in support of the rejection as being obvious. This is not an appropriate combination of references, but even if combined, the claims are still not met.

Ganguly et al. basically relate to the invention of antibacterial 2-(azacycloalkyl) penems as a "compound." Although Ganguly et al. disclose various pharmaceutical compositions, including topical compositions, along with pharmaceutically acceptable carriers, they are nothing but general lists. Above all,

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Ganguly et al. do not suggest anything about the possibility of keeping a cream or an ointment securely resident at a site of application by employing specific components in the base material of a topical composition.

Accordingly, the combination of Ganguly et al. with Lerner et al. which relate to a completely different invention from that of the present application, in no way makes the present invention obvious.

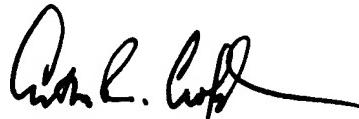
Thus, combining the two references still does not amount to the subject matter defined by applicants' claims and as such the rejection is deficient and must be withdrawn.

Reconsideration and favorable action are solicited.

Respectfully submitted,

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